NOAA Fleet Update

DECEMBER 2014

The following update provides the status of NOAA's fleet of ships and aircraft, which play a critical role in the collection of oceanographic, atmospheric, hydrographic, and fisheries data. NOAA's current fleet of 16 ships – the largest civilian research and survey fleet in the world – and nine aircraft, are operated, managed, and maintained by NOAA's Office of Marine and Aviation Operations (OMAO). OMAO includes civilians, mariners, and officers of the United States NOAA Commissioned Officer Corps (NOAA Corps), one of the nation's seven Uniformed Services.

Find us on Facebook for the latest news and activities.
http://www.facebook.com/NOAAOMAO

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Office of Marine and Aviation Operations (OMAO) and the NOAA Commissioned Officer Corps – In the News -

Below is a sampling of clips and web links to recent news items related to OMAO and the NOAA Corps.

Atlantic hurricane season stays quiet as predicted; Improved model, new surge forecast products and research projects debuted
-NOAA News Release
Among the highlights were both manned and unmanned aircraft missions in Atlantic hurricanes to collect data and evaluate forecast models. NOAA and NASA's missions involving the **Global Hawk**, …and NOAA used the much smaller **Coyote®,** an unmanned aircraft system released from NOAA's hurricane hunter manned aircraft, to collect wind, temperature, and other weather data..

Weather drones trace a hurricane's every move
-WJLA-TV (ABC Washington, DC) - Video only – please click link above

The NOAA Commissioned Officer Corps welcomes its newest officers to the service! Recently, Basic Officer Training Class No. 124 graduated alongside their U.S. Coast Guard officer candidate colleagues at a ceremony held at the Coast Guard Academy in New London, CT. The new officers will join the fleet of ships and aircraft right away. Congratulations!
[Photo: Petty Officer Cory Mendenhall, USCG]

OMAO's Ships and Centers

OMAO's Ship Tracker (screen shot below) shows information about the location - present and past - of our fleet of research and survey ships. http://shiptracker.noaa.gov

OMAO's ships and related Marine Centers are listed below based on the geographical location of the vessels' homeports starting in the Northeast and ending in the Pacific.

New Castle, NH

NOAA Ship *Ferdinand R. Hassler*

Commanding Officer: CDR Marc Moser
Primary Mission Category: Hydrographic Surveys
Ship Status: Alongside New Castle, NH, until January, for scheduled maintenance, winter repairs, scientific data processing, and crew rest and training.

Woods Hole, MA (currently docks in Newport, RI)

NOAA Ship *Henry B. Bigelow*

Commanding Officer: CDR G. Mark Miller
Primary Mission Category: Fisheries Research
Ship Status: Alongside Newport, RI, until February, for scheduled maintenance, winter repairs, scientific data processing, and crew rest and training.

Davisville, RI

NOAA Ship *Okeanos Explorer*

Commanding Officer: CDR Mark Wetzler
Primary Mission Category: Oceanographic Exploration and Research
Ship Status: Alongside Marine Operations Center – Atlantic, Norfolk, VA, until January, for scheduled maintenance, winter repairs, scientific data processing, and crew rest and training.

Norfolk, VA

NOAA Ship *Thomas Jefferson*

Commanding Officer: CAPT James Crocker
Primary Mission Category: Hydrographic Surveys
Ship Status: Alongside Marine Operations Center – Atlantic, Norfolk, VA, for scheduled maintenance, winter repairs, scientific data processing, and crew rest and training.

OMAO'S MARINE OPERATIONS CENTER – ATLANTIC (MOC-A)

CAPT Anne Lynch, Commanding Officer MOC-A
MOC-A serves as a homeport for one NOAA ship, and manages the day-to-day operations and provides administrative, engineering, maintenance, and logistical support for the research and survey ships in NOAA's Atlantic fleet. Each year these ships conduct dozens of missions to assess fish and marine mammal stocks, conduct coral reef research, collect seafloor data to update nautical charts, and explore the ocean.

Charleston, SC

NOAA Ship *Nancy Foster*

Commanding Officer: LCDR Jeffrey Shoup
Primary Mission Category: Oceanographic Research, Environmental Assessment
Ship Status: Alongside Charleston, SC, for scheduled maintenance, winter repairs, scientific data processing, and crew rest and training.

Here is a fantastic video of the NOAA Ship *Nancy Foster* as she makes her last transit of 2014, steaming into Charleston, South Carolina.
https://www.youtube.com/watch?v=cPwN9hCQfz4&feature=youtu.be
[Video: NOAA]

NOAA Ship *Ronald H. Brown*

Commanding Officer: CAPT Joseph Pica
Primary Mission Category: Oceanographic Research, Environmental Assessment
Ship Status: Alongside Marine Operations Center – Pacific Islands, Pearl Harbor, HI, for scheduled maintenance, winter repairs, scientific data processing, and crew rest and training.

Pascagoula, MS

NOAA Ship *Oregon II*

Commanding Officer: Master Dave Nelson
Primary Mission Category: Fisheries Research
Ship Status: Alongside Pascagoula, MS, for scheduled maintenance, winter repairs, scientific data processing, and crew rest and training.

NOAA's fleet is mostly in-port at this time for winter repairs and scientific data processing, but some of our ships worked hard right up until the Thanksgiving Holiday, like NOAA Ship Oregon II. Check out these great shots of the groundfish survey recently completed!

More info on these types of NOAA National Marine Fisheries Service missions: http://1.usa.gov/1tlCH9h

[Photo: ENS Rachel Pryor, NOAA]

NOAA Ship *Gordon Gunter*

Commanding Officer: Master Don Pratt
Primary Mission Category: Fisheries Research
Ship Status: Alongside Pascagoula, MS, for scheduled maintenance, winter repairs, scientific data processing, and crew rest and training.

NOAA Ship *Pisces*

Commanding Officer: CDR Peter Fischel
Primary Mission Category: Fisheries Research
Ship Status: Alongside Pascagoula, MS, for scheduled maintenance, winter repairs, scientific data processing, and crew rest and training.

San Diego, CA

NOAA Ship *Reuben Lasker*

Commanding Officer: CDR Keith Roberts
Primary Mission Category: Fisheries Research
Ship Status: The ship is alongside in San Diego, CA, due to voltage and harmonic issues within the propulsion motors and will remain alongside as solutions are developed.

Newport, OR

NOAA Ship *Rainier*

Commanding Officer: CDR E.J. Van Den Ameele
Primary Mission Category: Hydrographic Surveys
Ship Status: The ship is alongside Marine Operations Center – Pacific, Newport, OR, for scheduled maintenance, winter repairs, scientific data processing, and crew rest and training.

NOAA Ship *Bell M. Shimada*

Commanding Officer: CDR Brian Parker
Primary Mission Category: Fisheries Research
Ship Status: In drydock at Bay Ship & Yacht Shipyard in Alameda, CA, for a scheduled repair period.

OMAO'S MARINE OPERATIONS

CAPT Eric Berkowitz, Director of Marine Operations
OMAO's Marine Operations oversees operations of the three regional Centers, including the Marine Operations Center-Pacific, Marine Operations Center-Atlantic, and Marine Operations Center-Pacific Islands.

OMAO'S MARINE OPERATIONS CENTER – PACIFIC (MOC-P)

CAPT Douglas Baird, Commanding Officer MOC-P
MOC-P serves as a homeport for two NOAA ships, and manages the day-to-day operations and provides administrative, engineering, maintenance, and logistical support for the research and survey ships in NOAA's Pacific fleet. Each year these ships conduct dozens of missions to assess fish and marine mammal stocks, conduct coral reef research, collect seafloor data to update nautical charts, and explore the ocean.

Ketchikan, AK (currently docks in Newport, OR)

NOAA Ship *Fairweather*

Commanding Officer: CDR David Zezula
Primary Mission Category: Hydrographic Surveys
Ship Status: In drydock at the Bay Ship & Yacht Shipyard in Alameda, CA, for a scheduled repair period. Expected departure mid-January.

Kodiak, AK

NOAA Ship *Oscar Dyson*

Commanding Officer: CDR Arthur "Jesse" Stark
Primary Mission Category: Fisheries Research
Ship Status: Alongside Marine Operations Center – Pacific, in Newport, OR, for scheduled maintenance, winter repairs, scientific data processing, and crew rest and training.

Honolulu, HI

NOAA Ship *Hi'ialakai*

Commanding Officer: CDR Daniel Simon
Primary Mission Category: Oceanographic Research, Environmental Assessment
Ship Status: Alongside Marine Operations Center – Pacific Islands, Pearl Harbor, HI, for scheduled maintenance, winter repairs, scientific data processing, and crew rest and training.

NOAA Ship *Oscar Elton Sette*

Commanding Officer: CDR Stephanie Koes
Primary Mission Category: Fisheries Research
Ship Status: Alongside Marine Operations Center – Pacific Islands, Pearl Harbor, HI, for scheduled maintenance, winter repairs, scientific data processing, and crew rest and training.

OMAO'S MARINE OPERATIONS CENTER – PACIFIC ISLANDS (MOC-PI)

CAPT Robert Kamphaus, Commanding Officer MOC-PI
MOC-PI serves as a homeport for two NOAA ships, and manages the day-to-day operations and provides administrative, engineering, maintenance, and logistical support for the ships in NOAA's Pacific Islands' fleet.

OMAO's Aircraft

Tampa, Florida

OMAO'S AIRCRAFT OPERATIONS CENTER (AOC)

CAPT Harris Halverson, Commanding Officer AOC

The AOC, located at MacDill Air Force Base, serves as the main base for OMAO's fleet of nine aircraft and provides capable, mission-ready aircraft and professional crews to the scientific community. Whether studying global climate change or acid rain, assessing marine mammal populations, surveying coastal erosion, investigating oil spills, flight checking aeronautical charts, or improving hurricane prediction models, the AOC flight crews continue to operate in some of the world's most demanding flight regimes.

WP-3D (N42RF) – "Hurricane Hunter"

Current Mission: Scheduled maintenance and upgrades

With the close of the 2014 hurricane season, the aircraft will stand down from hurricane operations and undergo some instrumentation installation for its next project, a study of ocean winds for National Environmental Satellite, Data, and Information Service (NESDIS), scheduled to begin in January 2015.

WP-3D (N43RF)

Current Mission: Scheduled maintenance and upgrades

The aircraft will be undergoing scheduled maintenance and systems upgrades until January 2015.

Twin Otter (N46RF)

Aircraft Commander: LTJG Kevin Doremus

Current Mission: Northeast Atlantic Marine Assessment Program for Protected Species (AMAPPS) – Atlantic waters off of Maine, Massachusetts, and Nova Scotia until December 30, 2014

Aircraft is conducting the Northeast Atlantic Marine Assessment Program for Protected Species (AMAPPS). This multi-year survey will serve multiple objectives with respect to marine mammal conservation: 1) provide distribution and abundance of all species of cetaceans, seals, and sea turtles which will be used to develop spatially and temporally-specific density maps that will be available to other agencies and the public; 2) provide photo-identification records on Right whales, and 3) provide sightings of dead whales. The AMAPPS survey is a cooperative effort between NOAA's National Marine Fisheries Service, Northeast and Southeast Fisheries Science Centers.

Twin Otter (N48RF)

Aircraft Commander: LT Matthew Nardi
Temporary Base: Saint Simons Islands, GA
Current Mission: Southeastern Right Whale Survey – Georgia coastal waters until March 31, 2015

Aircraft is conducting the Southeastern Right Whale survey out of Saint Simons Island, GA. NOAA's National Marine Fisheries Service, Southeast Regional Office conducts these multi-aircraft surveys annually, from South Carolina to Florida, in an effort to determine calf production, right whale distribution relative to habitat variables, and to reduce ship collisions with right whales. Surveys are flown under contract or grants to the Florida Fish and Wildlife Conservation Commission, Georgia Department of Natural Resources, New England Aquarium, and the Wildlife Trust.

A picture of snowy Buffalo, New York from NOAA's Turbo Commander aircraft, N45RF, in the area performing a snow survey at the end of November 2014.
[Photo Credit: LTJG Kevin Doremus, NOAA]

Twin Otter (N56RF)

Temporary Base: Calgary, AB
Current Mission: Scheduled Maintenance Period

Aircraft has been undergoing an extensive scheduled maintenance period. Work should be complete by mid-December. The next project will be for Northeast Atlantic Marine Assessment Program for Protected Species (AMAPPS), taking over for N48RF.

Twin Otter (N57RF)

Aircraft Commander: LT John Rossi and LCDR Phillip Eastman
Temporary Base: Hyannis, MA
Current Mission: Northeast Right Whale Survey – Atlantic waters off of Maine and Massachusetts until January 2015

The aircraft will be conducting a survey of the North Atlantic Right Whale, off the New England coast. This survey will serve multiple objectives with respect to marine mammal conservation: 1) provide locations of North Atlantic Right whales to mariners, 2) provide description of Right whale distribution to support the implementation of seasonal and dynamic area management, 3) provide annual photo-identification records on Right whales, as well as detailed vertical photogrammetry in selected periods, 4) provide information on the distribution and abundance of marine mammals and marine turtles in the winter, spring, summer and fall seasons, 5) provide sightings of dead whales, 6) provide information on the distribution of shipping and fishing gear, and 7) census seal populations along the New England coast.

Gulfstream IV (N49RF)

Temporary Base: Savannah, GA
Current Mission: Scheduled Maintenance Period

Aircraft undergoing scheduled maintenance and avionics upgrades. Work will continue until late December 2014.

Jet Prop Commander (N45RF)

Aircraft Commander: TBD
Current Mission: Various locations for Snow Survey / Soil Moisture Surveys until April 30, 2015

Aircraft will be conducting Snow Survey operations for the National Operational Hydrologic Remote Sensing Center (NOHRSC) at the beginning of the month. The project utilizes an Airborne Gamma Radiation detector to make airborne Snow Water Equivalent (SWE) and soil moisture measurements. Airborne SWE measurements are used by NOAA National Weather Service (NWS) Weather Forecast Offices and NWS River Forecast Centers when issuing river and flood forecasts, water supply forecasts, and spring flood outlooks. Survey locations will be determined based on NOHRSC tasking. Depending on that tasking, the aircraft will later undergo instrumentation and conduct training flights out of MacDill Air Force Base in Florida.

King Air (N68RF)

Temporary Base: Wichita, KS
Current Mission: Paint Work

Aircraft is undergoing scheduled repainting. Work will continue through the end of December 2014.

Unmanned Systems Support

NASA Global Hawk

Location: Edwards Air Force Base (AFB), CA

One of NASA's Global Hawks is currently being instrumented for a multinational science campaign. The Coordinated Airborne Studies in the Tropics project, or CAST, will carry eight payloads (two from NOAA) operating out of Edwards AFB to the equatorial region for atmospheric profiling. Science flights are expected to begin in late February and conclude in March of 2015. A NOAA Corps officer, LCDR Jonathan Neuhaus, will be participating as a pilot and project manager.

ATI Resolution UAS

Location: Channel Islands, CA

Airborne Technologies Incorporated (ATI) Resolution Unmanned Aircraft System (UAS) provides a cost-effective real-time imaging and data acquisition platform for research and surveillance applications. Tsunami Debris surveys occurred over the Channel Islands, CA, between December 8-9, 2014.

APH-22 Hexacopter

Location: Stanwood, WA

Various dates in December – NOAA's National Marine Mammal Laboratory (NMML) are conducting training flights for future Alaskan Steller Sea Lion Surveys.

Location: Antarctica, Cape Shirreff and Copacabana Field Station

Various dates in December – NOAA's National Marine Fisheries Service, Southwest Fisheries Science Center are conducting operational flights in Antarctica to survey penguins, fur seals, and leopard seals.

Hexacopter used by the Southwest Fisheries Science Center UAS Program
[Photo: NOAA]

OMAO Partnerships

United States Senate Committee on Commerce, Science, and Transportation – Office of Ranking Member, Senator John Thune (R-SD)

Location: Washington, DC
Detail: LCDR Wendy Lewis, NOAA Commissioned Officer Corps

LCDR Lewis is currently on detail to the Committee and the office of Ranking Member Thune where she will be assisting on activities pertaining to oceans, atmosphere, and fisheries policy, as well as other matters within the Committee's jurisdiction

National Science Foundation

Location: Antarctica
Mission: LTJG Joe Phillips, NOAA Commissioned Officer Corps

Members of the NOAA Commissioned Officer Corps carry out NOAA's mission in remote locations across the globe. LTJG Phillips is assigned to Antarctica where he serves as the Station Chief for NOAA's Atmospheric Research Observatory (ARO) at the Amundsen-Scott South Pole Station. The ARO at the Amundsen-Scott South Pole Station is a National Science Foundation facility used in support of scientific research related to atmospheric phenomena.

Department of Defense - U.S. Pacific Command (USPACOM)

Location: Honolulu, HI
Embedded Liaison: CAPT Barry Choy, NOAA Commissioned Officer Corps

The U.S. Pacific Command (USPACOM) area of responsibility encompasses approximately half the earth's surface and more than half of its population. The 36 nations that comprise the Asia-Pacific include: two of the three largest economies and nine of the ten smallest; the most populous nation; the largest democracy; the largest Muslim-majority nation; and the smallest republic in the world. The region is a vital driver of the global economy and includes the world's busiest international sea lanes and nine of the ten largest ports. By any meaningful measure, the Asia-Pacific is also the most militarized region in the world, with seven of the world's ten largest standing militaries and five of the world's declared nuclear nations. Under these circumstances, the strategic complexity facing the region is unique. CAPT Choy is linked closely with the activities within the region allowing for identification of opportunities and cooperation between USPACOM and NOAA, and better overall government function situational awareness in the region.

Department of Defense - U.S. Northern Command (USNORTHCOM)

Location: Boulder, CO
Embedded Liaison: CAPT Mark Moran, NOAA Commissioned Officer Corps

U.S. Northern Command (USNORTHCOM) partners to conduct homeland defense, civil support, and security cooperation to defend and secure the United States and its interests. NORTHCOM's area of responsibility includes air, land, and sea approaches and encompasses the continental United States, Alaska, Canada, Mexico, and the surrounding water out to approximately 500 nautical miles. It also includes the Gulf of Mexico, the Straits of Florida, and portions of the Caribbean region that include The Bahamas, Puerto Rico, and the U.S. Virgin Islands. CAPT Moran serves as the liaison for the NOAA Corps, helping to plan, organize, and execute homeland defense and civil support missions.

Department of Defense - U.S. Navy

Location: Washington, DC

Embedded Liaison: CDR Christiaan Van Westendorp, NOAA Commissioned Officer Corps

The NOAA liaison to the Oceanographer of the Navy serves as the Head of the Interagency Policy Branch of the International and Interagency Policy Division, Office of the Oceanographer of the Navy, located at the U.S. Naval Observatory. The mission of this Division is to coordinate and execute the Oceanographer of the Navy functions related to policy and programs involving international and/or interagency oceanography. Oceanography includes meteorology, oceanography, mapping, charting and geodesy, astronomy, and precise time and time interval. Starting in July, CDR Van Westendorp will serve as the interface for the Oceanographer of the Navy between Navy and U.S. Federal Agencies including NOAA.

Department of Defense and NOAA's Office of Coast Survey

Location: Silver Spring, MD

Embedded Liaison: CDR Matthew Wingate, NOAA Commissioned Officer Corps

NOAA's National Ocean Service Office of Coast Survey (OCS) is the lead federal provider of nautical charts and hydrographic survey data of the U.S. Exclusive Economic Zone. Meeting this responsibility requires active cooperation and coordination with federal partners in the Departments of Defense and Homeland Security with which NOAA shares responsibility for U.S. navigational products and services. CDR Wingate tracks, coordinates, and adds value to existing activities involving OCS subject matter experts and partners, seeks and develops additional opportunities for collaboration, and increases visibility and access to these activities and partnerships for OCS leadership.

Department of Homeland Security - U.S. Coast Guard

Location: Washington, DC

Embedded Liaison: CAPT Jeremy Adams, NOAA Commissioned Officer Corps

As the NOAA liaison to the United States Coast Guard (USCG), CAPT Adams maintains a current and comprehensive knowledge of interagency activities and policies related to the USCG and NOAA. He identifies potential conflict or benefit issues for analysis and evaluation, conducts appropriate assessments and studies, and serves as the interface between NOAA and the USCG. CAPT Adams initiates, designs, and implements strategies through federal agency liaison and coordination that results in cooperative arrangements for maritime security, oceanographic research, hazardous materials spill response, and many other activities.

Teacher At Sea Program

The mission of the Teacher at Sea (TAS) program is to give teachers a clearer insight into our ocean planet, a greater understanding of maritime work and studies, and to increase their level of environmental literacy by fostering an interdisciplinary research experience. The program provides a unique environment for learning and teaching by sending kindergarten through college-level teachers to sea aboard NOAA research and survey ships to work under the tutelage of scientists and crew. Then, armed with new understanding and experience, teachers bring this knowledge back to their classrooms. Since its inception in 1990, the program has enabled more than 600 teachers to gain first-hand experience of science and life at sea. By participating in this program, teachers enrich their classroom curricula with knowledge that can only be gained by living and working side-by-side, day and night, with those who contribute to the world's body of oceanic and atmospheric scientific knowledge. Below is a list of the NOAA Teachers at Sea for the current monthly update for the 2014 Field Season. Once they have embarked on their cruise, you can gain access to their blogs which document their missions at sea and offer a wealth of information about the research being conducted as well as personal stories. More info: http://teacheratsea.noaa.gov

2014 Current TAS Placements Blogs – http://teacheratsea.noaa.gov/2014/index.html

Chris Henricksen, Teacher at Sea from 2014, with NOAA Corps Officer LTJG Theresa Smith at Mark Twain Elementary School in Westerville, OH – November 2014.

LTJG Theresa Smith visited Chris Henricksen's (TAS, 2014, NOAA Ship *Henry B. Bigelow*) classroom in Westerville, OH. LTJG Smith attended school in Westerville and was trained by Commanding Officer, G. Mark Miller, of NOAA Ship *Henry B. Bigelow*. She spent time at Mark Twain Elementary sharing her knowledge of NOAA science and careers with the students.
[Photo: Westerville City Schools]

OMAO - NOAA Dive Program

OMAO manages and implements NOAA's Dive Program (NDP), which trains and certifies scientists, engineers, and technicians from federal, state, tribal governments, and the private sector to perform the variety of tasks carried out underwater to support NOAA's mission. NDP also has cooperative diving agreements with over 100 government agencies and academic institutions. NOAA has more than 400 divers who perform over 14,000 dives per year. The NDP is headquartered at the NOAA Diving Center at the NOAA Western Regional Center in Seattle, Washington. http://www.ndc.noaa.gov/gi_program.html

The NOAA Diving Program conducts diving operations all over the world and uses different kinds of equipment depending on the mission needs. Here is a picture of a team of NOAA divers restoring damaged coral reefs. Read the article at the link below to learn more about the extensive work the divers did to clean up and reattach corals to the sea floor at a damaged site off of the Hawaiian Island of Oahu.

Find out what this vacuum has to do with restoring a damaged coral reef
http://response.restoration.noaa.gov/about/media/how-restore-damaged-coral-reef-undersea-vacuums-power-washers-and-winter-storms.htmll
[Photo: NOAA]

OMAO - NOAA Small Boat Program

OMAO sets policy and provides safety inspections for almost 400 small boats operated by the various Line and program offices throughout NOAA, which support fisheries laboratories, dive support, nautical charting, ocean and Great Lakes research, and more. More info: http://www.sbp.noaa.gov/

NOAA small boats support many diverse operations across the country.
[Photos: NOAA]




Office of Marine and Aviation Operations

Providing environmental intelligence for a dynamic world.

The personnel, ships, and aircraft of NOAA play a critical role in gathering environmental data vital to the nation's economic security, the safety of its citizens, and the understanding, protection, and management of our natural resources. The NOAA fleet is managed and operated by the Office of Marine and Aviation Operations (OMAO), an office comprising civilians, mariners, and officers of the NOAA Commissioned Officer Corps, one of the seven uniformed services of the United States. NOAA's roots trace back to 1807, when President Thomas Jefferson ordered the first comprehensive coastal surveys. Those early surveys ensured safe passage of ship-borne cargo for a young nation. As the needs of the nation have grown, so too have OMAO's responsibilities. Today, OMAO civilians and NOAA Corps officers operate, manage, and maintain NOAA's active fleet of 16 research and survey ships and 9 specialized aircraft. Together, OMAO and the NOAA Corps support nearly all of NOAA's missions.

NOAA has the largest fleet of civilian research and survey ships in the nation. The fleet ranges from large oceanographic ships capable of exploring and charting the world's deepest ocean, to smaller vessels responsible for surveying the shallow bays and inlets of the United States. The fleet supports a wide range of marine activities including fisheries surveys, nautical charting, and ocean and climate studies. Based throughout the continental United States, Alaska, and Hawaii, the ships operate in all regions of the nation and around the world. NOAA's aircraft provide a wide range of airborne capabilities. Our highly specialized Lockheed WP-3D turboprop "hurricane hunter" aircraft are equipped with an unprecedented variety of scientific instrumentation, radars, and recording systems for both in situ and remote sensing measurements of the atmosphere, the Earth, and its environment. Together with NOAA's Gulfstream IV-SP hurricane surveillance jet, these aircraft greatly improve our physical understanding of hurricanes and enhance the accuracy of tropical cyclone forecasts. NOAA's light aircraft also play a vital role in monitoring our environment. Our King Air, Commander and Twin Otter aircraft support marine mammal population studies, shoreline change assessments, oil spill investigations, and snowpack surveys for spring flood forecasts.

The NOAA fleet provides immediate response capabilities for unpredictable events. For example, after Hurricane Sandy, NOAA ships *Thomas Jefferson* and the newly commissioned *Ferdinand R. Hassler* conducted emergency bathometric surveys to locate possible submerged navigational hazards in the ports of New York and Virginia. These surveys enabled the ports to reopen quickly. Aerial images of storm-stricken regions, taken by NOAA aircraft, helped residents and emergency workers to quickly assess the condition of houses, bridges, and vital infrastructure.

In 2011, OMAO's Aero Commander and Jetprop Commander aircraft conducted snow surveys, which increased the accuracy of National Weather Service's flood forecasting during a record year of snow and floods. In 2010, the NOAA fleet and the NOAA Corps played a major role in the response to the BP Deepwater Horizon oil spill, conducting extensive studies in the Gulf of Mexico to monitor the health of the ecosystem. NOAA's entire Atlantic fleet and over a quarter of the total strength of the NOAA Corps were deployed to the Gulf following the spill, developing mission plans and assisting response efforts.

While manned aircraft and sea-going vessels have been, and will continue to be, a primary source of environmental data, new technology will have a significant role to play in the future NOAA fleet. OMAO, in coordination with other NOAA offices and federal agencies, is evaluating and deploying remotely piloted underwater and aircraft systems that could significantly contribute to environmental observations. OMAO's ongoing challenge is to meet the growing demand for *in situ* scientific data while providing the highest level of service. As NOAA's fleet continues to age, maintenance costs steadily increase. Operational costs have increased as well, driven largely by rising fuel costs. To better serve the needs of the nation, NOAA is examining the composition of the fleet through an exhaustive and critical review of at-sea science and observation requirements. Our objective is to develop a clear, cost-efficient path forward to ensure that the NOAA fleet can continue to conduct at-sea surveys and research vital to fisheries management, updating nautical charts, responding to natural and manmade disasters, and understanding coastal and marine systems more fully. Meeting these requirements is essential to developing sustainable, science-based management and conservation plans that protect the health and resiliency of these resources over the long-term.

We are also continuing our effort to build a civilian and NOAA Corps officer work force that is uniquely qualified to gather critical environmental intelligence and be adaptive and responsive to a changing world. We transitioned our basic NOAA Corps officer training class to the U.S. Coast Guard Academy, where newly commissioned officers train alongside Coast Guard officer candidates, developing skills and professional relationships that will benefit both services, especially during challenging times.

Finally, we continue to expand our partnerships with other federal agencies. We are proud of our longstanding and fruitful working relationships with the U.S. Air Force, U.S. Coast Guard, U.S. Navy, and U.S. Public Health Service and through the Interagency Working Group on Facilities and Infrastructure, continue facilitating cross-agency cooperation for the federal fleet of research and survey ships. Active collaboration among the Federal family is critical to ensuring the long-term capability and success of the federal ocean infrastructure. Our partners' success is our success.

NOAA Commissioned Officer Corps

– Supporting NOAA's Science, Service, and Stewardship –

The NOAA Commissioned Officer Corps (NOAA Corps) is one of the nation's seven uniformed services and serve with the 'special trust and confidence' of the President. NOAA Corps officers are an integral part of the National Oceanic and Atmospheric Administration (NOAA), an agency of the U.S. Department of Commerce. With 321 officers, the NOAA Corps serves throughout the agency's line and staff offices to support nearly all of NOAA's programs and missions. The combination of commissioned service and scientific expertise makes these officers uniquely capable of leading some of NOAA's most important initiatives.

The NOAA Corps is part of NOAA's Office of Marine and Aviation Operations (OMAO) and traces its roots back to the former U.S. Coast and Geodetic Survey, which dates back to 1807 and President Thomas Jefferson. In 1970, NOAA was created to develop a coordinated approach to oceanographic and atmospheric research and subsequent legislation converted the commissioned officer corps to the NOAA Corps.

The NOAA Corps today provides a cadre of professionals trained in engineering, earth sciences, oceanography, meteorology, fisheries science, and other related disciplines. Corps officers operate NOAA's ships, fly aircraft, manage research projects, conduct diving operations, and serve in staff positions throughout NOAA.

Benefits of the NOAA Corps to the Nation

The combination of commissioned service with scientific and operational expertise, allows the NOAA Corps to provide a unique and indispensable service to the nation. NOAA Corps officers enable NOAA to fulfill mission requirements, meet changing environmental concerns, take advantage of emerging technologies, and serve as environmental first responders. For example:

- In 2012 after Hurricane Sandy, seafloor sonar surveys completed by NOAA ships and small boats helped reopen Baltimore and Virginia ports, quickly restarting commerce and allowing Navy ships to return to port. New York and New Jersey ports were reopened, enabling emergency supplies to reach some of the hardest-hit areas. Maritime traffic resumed more quickly because NOAA embedded regional navigation managers within command centers.

- Hours after Sandy, NOAA planes and scientists conducted aerial surveys of the affected coastlines and immediately published the photos online, allowing emergency managers and residents to examine the damage even before ground inspections were permitted. These surveys are also vital to FEMA assessment teams and other on-the-ground responders and those managing oil spill clean-up and damage assessment. Over 3,000 miles of coastline have been surveyed, and over 10,000 images processed to document coastal damage and impacts to navigation.

- In 2011, OMAO's Aero Commander and Jetprop Commander aircraft conducted snow surveys, which increased the accuracy of National Weather Service's River Forecast Centers flood forecasting during a record year of snow and floods.

- After Hurricane Irene in 2011, the NOAA Ship *Ferdinand Hassler* and team completed 300 lineal nautical miles of survey work in less than 48 hours providing a Damage Assessment that enabled the U.S. Coast Guard to re-open ports and restore more than $5M per hour in maritime commerce less than 3 days after the storm.

- More than 80 officers, or a quarter of the NOAA Corps' total strength, were re-assigned and/or deployed to support the Deepwater Horizon disaster response in the Gulf in 2010.
    - Eight NOAA-owned vessels, or the entire Atlantic fleet, were also deployed to the Gulf of Mexico for spill response, as well as several aircraft.

- NOAA Corps officers who run NOAA's Ships support fish stock and marine mammal assessments, marine ecosystem studies, ocean exploration, coral reef preservation and protection, and mapping and charting around the United States and the Arctic, and more.

- NOAA Corps officers who run NOAA's Aircraft collect environmental and geographic data essential to studying climate change, assess marine mammal populations, survey coastal erosion, investigate oil spills, and improve hurricane and winter storm forecasts as they pilot the WP-3D Orion hurricane hunters and other aircraft that fly through, and above the storms to obtain critical forecasting data.

Find out more about the NOAA Corps, its mission and history at http://www.noaacorps.noaa.gov/.